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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,381	09/26/2003	Bharat T. Doshi	Doshi 56-5-21-17-33	8412

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EXAMINER	
CLOUD, JOIYA M	

ART UNIT	PAPER NUMBER
2144	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/673,381	DOSHI ET AL.	
	Examiner	Art Unit	
	Joiya M. Cloud	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/27/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the application filed on 11/21/2207. Claims 1-23 represent Calculation, representation, and maintenance of sharing information in mesh networks.

2. ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-23** are rejected under 35 U.S.C. 102(b) as being anticipated by Chudak et al. **(US Patent No. 7, 308, 198 B1).**

As per claim 1, Chudak teaches comprising: representing, in a network data structure, information associated with a mesh network having a plurality of nodes interconnected by a plurality of links, wherein the network data structure comprises, for each link in the network and each node or other link in the network **(Abstract, Figure 5c, where Chudak discloses a telecommunications mesh network and a method for allocating protection bandwidth)**, a representation of a minimum amount of protection bandwidth required to be reserved on said each link to restore service upon failure of said node or other link **(col. 5, lines 15-25 and col. 5, lines 39-57)**; receiving a request for a new service in the network, wherein the new service is represented by a service data structure comprising an identification of each link and transit node

in a primary path for the new service **(col. 5, lines 20-25)**; determining, using the network and service data structures, whether the new service requires additional protection bandwidth to be reserved on any link in the network **(col. 23, lines 35-40)**; and updating the network data structure if any additional protection bandwidth is determined to be required for the new service **(col. 22, lines 9-12)**.

As per claim 2, Chudak teaches wherein the service data structure further comprises an identification of bandwidth associated with the new service **(col. 8, lines 24-28).**

As per claim 3, Chudak teaches wherein the network is a virtual-circuit mesh data network that transmits packetized data **(col. 5, lines 10-25)**.

As per claims 4 and 5, Chudak wherein the network data structure is distributed over the network such that at least one node in the network does not have all of the information in the network data structure and wherein each of the nodes in the network has all of the information in the network data structure **(col. 6, lines 9-29)**.

As per claim 6, Chudak teaches a method further comprising, in response to the new service request, determining a restoration path for the new service in the network using the network data structure **(col. 4, lines 15-16, col. 5, lines 54-57, and col. 26, lines 40-46)**.

As per claim 7, Chudak teaches wherein the network data structure is an array of vectors, wherein: each vector in the array corresponds to a different link in the network; each vector in the array has a plurality of entries corresponding to the nodes and links in the network; for a first vector corresponding to a first link **(col. 15, lines 34-41 and col. 18, lines 49-54)**, each entry in the first vector corresponding to a node or other link identifies the minimum amount of protection bandwidth required to be reserved on the first link to restore service upon failure of

the node or other link **(col. 5, lines 39-54)**; and the service data structure is a primary path vector having a plurality of entries corresponding to the nodes and links in the network, wherein: each entry of the primary path vector identifies whether the corresponding node or link is part of the primary path for the new service **(col. 26, lines 9-32 and col. 18, lines 49-54)**.

As per claim 8, Chudak teaches wherein determining whether the new service requires any additional protection bandwidth to be reserved on a link A in the network comprises applying a vector addition operation between the primary path vector corresponding to the new service request and the vector of the array corresponding to the link A to form a result vector, and comparing the maximum value in the result vector with the bandwidth already reserved on the link A to determine whether any additional protection bandwidth is required for the new service **(col. 15, lines 29-51 and col. 17, lines 60-67)**.

As per claim 9, Chudak teaches wherein the additional protection bandwidth is required and is reserved if any result vector entry is greater than the bandwidth already reserved on the link **(col. 9, lines 15-25)**.

As per claim 10, Chudak teaches wherein the vector addition operation is applied between the primary path vector and each vector in the array corresponding to each different link in a restoration path for the new service **(col. 17, lines 60-67)**.

As per claim 11, Chudak teaches wherein the service data structure is primary path node-link vector V.sub.pnl **(col. 14, lines)**.

As per claim 12, Chudak teaches wherein an incremental version of the network data structure is used to reduce the amount of data that is transmitted in the network to disseminate the information **(col. 27, lines 40-46)**.

As per claim 13-15, Chudak teaches wherein transmission control protocol/Internet protocol (TCP/IP) connections are used for the dissemination; wherein the compact representation is a node aggregate vector V.sub.na wherein each element of V.sub.na corresponds to a node in the network wherein the element's value is a function of the maximum of reservation bandwidths reserved on all links incident to the node and wherein the dissemination is accomplished using a link-state routing protocol **(col. 3, lines 57-67).**

As per claim 16, Chudak teaches wherein a compact version of the network data structure is used to reduce the amount of data that needs to be transmitted in the network to disseminate the information about each link **(col. 12, lines 23-40)**.

As per claims 17-19, claims 17-19 lists substantially the same elements as claim 1 and is thus rejected using the same rationale.

As per claim 20, Chudak teaches wherein a compact version of the network data structure is used to reduce the amount of data that needs to be transmitted in the network to disseminate the information about each link **(col. 27, lines 40-46)**.

As per claim 21, Chudak teaches wherein: the network data structure is an array of vectors, wherein: each vector in the array corresponds to a different link in the network; each vector in the array has a plurality of entries corresponding to all the nodes and links in the network; for a first vector corresponding to a first link, each entry in the first vector corresponding to a node or other link identifies the minimum amount of protection bandwidth required to be reserved on the first link to restore service upon failure of the node or other link **(col. 5, lines 20-28)**; and the service data structure is a primary path vector having a plurality of entries corresponding to the nodes and links in the network, wherein each entry of the primary

path vector identifies whether the corresponding node or link is part of the primary path for the new service **(col. 6, lines 9-23 and col. 26, lines 9-19)**.

As per claim 22, Chudak teaches wherein: the network data structure is an array of vectors, wherein: each vector in the array corresponds to a different link in the network; each vector in the array has a plurality of entries corresponding to the nodes and links in the network; for a first vector corresponding to a first link, each entry in the first vector corresponding to a node or other link identifies the minimum amount of protection bandwidth required to be reserved on the first link to restore service upon failure of the node or other link **(Abstract and col. 5, lines 20-28)**; and the service data structure is a primary path vector having a plurality of entries corresponding to all the nodes and links in the network, wherein each entry of the primary path vector identifies whether the corresponding node or link is or is not part of the primary path for the new service **(Figure 7b and col. 6, lines 9-23)**.

As per claim 23, Chudak teaches wherein: the network data structure is an array of vectors, wherein: each vector in the array corresponds to a different link in the network; each vector in the array has a plurality of entries corresponding to the nodes and links in the network; for a first vector corresponding to a first link, each entry in the first vector corresponding to a node or other link identifies the minimum amount of protection bandwidth required to be reserved on the first link to restore service upon failure of the node or other link **(Abstract and (col. 5, lines 20-28)**; and the service data structure is a primary path vector having a plurality of entries corresponding to the nodes and links in the network, wherein each entry of the primary path vector identifies whether the corresponding node or link is part of the primary path for the new service, wherein at least one entry of the primary path vector identifies that the

corresponding node or link is not part of the primary path for the service **(Figure 7b and col. 6, lines 9-23)**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joiya Cloud whose telephone number is 571-270-1146. The examiner can normally be reached Monday to Friday from on 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3922.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMC

William C. Vaughn

Supervisory Patent Examiner **February 18, 2008**

WILLIAM VAUGHN
SUPERVISORY PATENT EXAMINER
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